



THE UNIVERSITY
of
WISCONSIN
MADISON

COLLEGE OF ENGINEERING ■ DEPARTMENT OF ENGINEERING PROFESSIONAL DEVELOPMENT

Integrating Maintenance into Street and Highway Design

November 15–16, 2004
Madison, Wisconsin

**Learn methods and tools to improve
the project design process:**

- **Avoid construction problems**
- **Facilitate operations and
maintenance**
- **Minimize disruptions
and delay**



*Co-sponsored by the
Midwest Regional University
Transportation Center*



Scholarships available...see inside!

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Improve Transportation Project Design

This course examines each step in the transportation project design process. Specific tools and methods will be provided to enable the project designer to better anticipate issues and problems connected to the life cycles of transportation structures and facilities.

Avoid Construction Problems

Recognized experts in Construction Engineering Management (CEM) will guide you through a process that will help you implement a plan from design into cost-effective construction.

Facilitate Operation and Maintenance

Learn what you can do to incorporate O&M considerations into the design process. Learn how transportation facilities can be designed to make it easier to conduct inspection, using materials and configurations that better enable inspector access. Learn how to incorporate maintenance activities into the original design.

Minimize Disruption and Delay

The public is increasingly intolerant of delays caused by service disruptions associated with inspection, maintenance, repair and replacement of transportation facilities.

How can we minimize disruptions and delays?

How can we extend expected pavement life?

How can we assure that drainage structures will operate as designed?

How can a design improve traffic management during construction and maintenance operations?

This course will demonstrate how to address these questions in the initial phases of a project – always easier and more cost-effective than having to make adjustments later.

Who Should Attend

This course will benefit first-line supervisor/managers and staff engineers involved with project design (PD) and operations.

For Related Course Descriptions

<http://epdweb.engr.wisc.edu/catalogs/civil.lasso>

Integrating Maintenance into Street and Highway Design

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New Course

The Midwest Regional University Transportation Center (MRUTC) at the University of Wisconsin–Madison has developed this new course. Its purpose is to improve the project design process by effectively incorporating the consideration of construction, operation, inspection and maintenance.

Expert Instructors

Phil Fish has extensive hands-on experience with inspection, analysis and rehabilitation of transportation-related structures. He served for many years as supervisor of the Transportation Bridge Inspection Program for the Wisconsin DOT. Having achieved national recognition, he is now a consultant and educator, specializing in training for inspection and failure analysis. He is president of Fish Inspection & Testing, LLC.

Jeffrey S. Russell PhD is chairman of the Civil and Environmental Engineering Department at the University of Wisconsin–Madison. As director of the Construction Engineering Management program (CEM) at UW–Madison, Russell has conducted significant research and analysis of the construction process, including methods of incorporating operations and maintenance into design. Russell has received many awards, including Outstanding Professional Engineer in Education, awarded by the Wisconsin Society of Professional Engineers (WSPE).

Ernie Wittwer is director of the Midwest Regional University Transportation Center (MRUTC). He is in charge of the Center's many programs that seek to coordinate and focus research efforts in the Midwest region to improve the asset management ability of transportation agencies. Prior to this, Wittwer served as administrator of investment management, special assistant to the secretary for policy development, director of program management, and director of budget for the Wisconsin DOT.

Earn Continuing Education Credit

Participants in this course will earn 1.2 Continuing Education Units (CEU) or 12 Professional Development Hours (PDH).

Scholarships Available!

A limited number of scholarships are available to employees of state and local transportation and public works agencies. The Midwest Regional University Transportation Center (MRUTC) at the University of Wisconsin–Madison provides these scholarships, awarded on a first-come-first-served basis. Each \$400 scholarship can only be applied toward the enrollment fee for this course. To apply for the scholarship, please contact Howard Rosen at 608-262-4341 (or e-mail rosen@engr.wisc.edu).

Course Outline

Monday, November 15

8:00 Registration/Continental Breakfast (provided)

The Pyle Center
702 Langdon Street
Madison, Wisconsin

8:30 Welcome and Course Introduction

8:45 The Transportation Design Process: Theory and Reality

9:30 Designing for the Life Cycle

Facilitated Discussions:

- Planning
- Design
- Construction
- Operations
- Inspection
- Maintenance

10:30 Break

10:45 Anticipating the Unanticipated Impacts of Design

11:15 Designing for Specific Structures and Facilities

Facilitated Discussions:

- Pavements
- Bridges
- Traffic safety
- Roadsides and appurtenances

12:15 Lunch (provided)

1:30 Managing Design for Construction, Operation and Maintenance

- Understanding system linkages
- Improving life cycle performance
- Minimizing life cycle costs
- Enhancing the design process

2:45 Break

3:00 Case Study Exercise

Use real-world examples to identify opportunities and methods to improve the project design process

3:45 Summary of Day 1

4:00 Adjournment

Tuesday, November 16

8:00 Effective Team Building

- Including other disciplines and perspectives
- Making a team process work

9:30 Adopting a Life Cycle Approach

- Understanding costs and impacts of design choices
- Understanding O&M perspectives
- Total cost vs. initial cost

10:30 Break

10:45 Tools for Improving Project Design

- Checklists
- Cost tables
- Suggested procedures

11:45 Lunch (provided)

12:45 Small Group Exercise: Case Study

Applying the tools and methods introduced by this course to improve the project design process

1:45 Break

2:00 Small Group Exercise: Case Study (continued)

2:45 Presentation and Discussion of Group Exercises

3:15 Summary and Conclusion

3:30 Final Adjournment

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Four Easy Ways to Enroll

Upcoming Courses

Managing Snow and Ice Control Operations

October 4–5, 2004, Madison, WI
Course #G006

Pavement Design

November 15–16, 2004, Madison, WI
Course #G067

Evaluation and Rehabilitation of Pavements

November 17–18, 2004, Madison, WI
Course #G068

Effective Bridge Rehabilitation

December 1–3, 2004, Madison, WI
Course #G070

Highway Bridge Design

December 6–8, 2004, Madison, WI
Course #G072

Fundamentals of Railroad-Highway Crossings

January 25–26, 2005, Madison, WI
Course #G154

Improving Public Works Construction Inspection Skills

February 14–15, 2005, Madison, WI
Course #G033

Maintaining Asphalt Pavements

February 16–17, 2005, Madison, WI
Course #G034

Solving Neighborhood Traffic Problems

March 14–15, 2005, Madison, WI
Course #G137

Open Channel Design

April 18–19, 2005, Madison, WI
Course #G424

For course details, check our Web site at <http://epdweb.engr.wisc.edu/courses>

Need to Know More?

Call toll free 800-462-0876 and ask for

Program Director:

Howard Rosen
608-262-4341

Program Assistant:

Ruth McDowell

Or e-mail

custserv@epd.engr.wisc.edu

General Information

Fee Covers Notebook and course materials, break refreshments, lunches, and certificate.

Cancellation If you cannot attend, please notify us by November 8, and we will refund your fee. Cancellations received after that time and no-shows are subject to a \$150 administrative fee. You may enroll a substitute at any time before the course starts.

Location *Integrating Maintenance into Street and Highway Design* will be held at The Pyle Center, 702 Langdon Street, Madison, Wisconsin. If you must be contacted during the course, phone messages may be left for you at 608-262-1122.

Accommodations We have reserved a block of rooms for course participants at The Lowell Center, 610 Langdon Street. To receive the special rate of \$77 sgl/\$87 dbl including parking and breakfast, please call 608-256-2621 or 866-301-1753 before October 15, mention that you will be attending this course, and indicate course code #IMID.

**Phone:**

800-462-0876 or
608-262-1299 (TDD 265-2370)

Mail to:

Engineering Registration, The Pyle Center
702 Langdon Street, Dept. 108
Madison, Wisconsin 53706

**Internet:**

<http://epdweb.engr.wisc.edu/webG421>

Fax:

800-442-4214 or 608-265-3448

**Course Information**

- ☐ Please enroll me in **Integrating Maintenance into Street and Highway Design Course #G421**, November 15–16, 2004 in Madison, WI Fee: \$595
- ☐ Yes, I want to apply for a MRUTC scholarship to attend this course. I understand that this scholarship is for employees of state and local transportation agencies and, if awarded, would reduce the total registration fee to \$195.

Personal Information (Please print clearly.)

Name _____

Title _____

Company _____

Address _____

City/State/Zip _____

Phone (_____) _____ Fax (_____) _____

E-mail _____

Additional Enrollee

Name _____

Title _____

E-mail _____

Billing Information

- ☐ Bill my company ☐ P.O. or check enclosed (Payable in U.S. funds to UW–Madison)



Cardholder's Name _____

Card No. _____ Expires _____

UW#

**Important—please enter
the 3-digit UW# Code
from the mailing label.**

- ☐ Please check the box if you are a person with a disability and desire special accommodations. A customer service representative will contact you. Requests will be kept confidential.